BREAKOUT GROUP GUIDANCE

Vision 21 Workshop for Virtual Simulation

September 11-12, 2001

Pittsburgh, Pennsylvania

Workshop Objectives

- **Foster communications between developers of Vision 21 technologies and developers of models/simulation systems**
- **Examine key modeling/simulation needs**
  - model/simulator development
  - user interfaces
  - information exchange/communications
  - government role
- **Help develop Vision 21 modeling/simulation strategy**

Breakout Groups
DAY I

- **Fuel and Gas Stream Processing**
  - Combustion
  - Gasification
  - Gas cleanup and separation
- **Electricity from Syngas**
  - gas turbines
  - fuel cells
- **Fuels/Chemicals from Syngas**
  - FT reactor
  - Methanol
  - Other fuels/chemicals

Issues for Breakout Groups Discussions

DAY I

- Model Development
- Information Exchange/Communications
- Government Role

DAY II

- Simulator Development
- Model/Simulator - User Interface
- Next Steps

Breakout Group Assignments
Fuel & Gas Stream Processing

Janos M. Beer, MIT
Mike Bockelie, Reaction Engineering Int'l.
Christopher Hadad, Ohio State Univ.
Alasdair C.I. Heath, Bechtel R&D
Dale Keairns, SAIC
David Lewandowski, Consol Energy
William F. Michels, Fuel Tech
John C. Molburg, ANL
James L. Moseley, WVU
Thomas O'Brien, NETL
Sreekanth Pannala, ORNL
John E. Plunkett, EG&G Technical Services
Ashok Rao, Univ. of California, Irvine
A.C.(Paul) Raptis, ANL
Adel F. Sarofim, Reaction Engineering Int'l.
David Swensen, Reaction Engineering Int'l.

Breakout Group Assignments
Electricity from Syngas

David H. Archer, CMU
Benedicte Bascle, Siemens Corporate Research
Michael B. Berkenpas, CMU
Zhong-Ying Chen, SAIC
James A. Ciesar, Siemens Westinghouse Power Corp.
Kelly J. Knight, Bechtel R&D
Stewart J. Lehman, KraftWork Systems
Michael Lukas, Fuel Cell Energy
Adyemir Nehrozoglu, Foster Wheeler Development Corp.
John Ruether, NETL
Tom I-P. Shih, Michigan State Univ.
Cliff Smith, CFD Research Corp.
Guodong Sun, CMU

Breakout Group Assignments
Fuels/Chemicals from Syngas

Jerry Boyle, NETL
Edward D. Brandner, EXPORTech
Kenneth Bryden, Iowa State Univ.
Dragomir B. Bukur, Texas A&M Univ.
Issac K Gamwo, NETL
Santosh K. Gangwal, RTI
Lynn Layman, Pittsburgh Supercomputer Center
Madhava Syamlal, Fluent
James N. Tilton, DuPont Engineering

Breakout Groups
DAY II

- **Vision 21 Virtual Plant Simulations**
  - Simulator development
  - Visualization
  - Next steps

2 Breakout Groups Address Same Issues

Breakout Group Assignments
Vision 21 Virtual Plant Simulations

Group I

Berkenpas
Brandner
Bukur
Chen
Gamwo
Hadad
Heath
Knight
Lukas
Michels
Moseley
Nehrozoglu
Pannala
Rao
Raptis
Ruether
Sarofim
Smith
Tilton

Group II

Archer
Bascle
Beer
Bockelie
Boyle
Bryden
Ciesar
Gangwal
Keairns
Layman
Lehman
Lewandowski
Molburg
O'Brien
Plunkett
Shih
Sun
Swensen
Syamlal

Ground Rules

- **Self organize**
  - select discussion leader, recorder, presenter
- **Use time wisely**
  - allow enough time to prepare presentations/reports
  - Day I: 9:15 - 4:30, Day 2: 8:15 -10:45
- **Lap-top computers available**
  - documentation
  - presentations to group
- **Product manager overview**
  - will help orient group

Product of Workshop

A list of recommendations that address priorities and issues (add other issues you think relevant)

- stand-alone
- specific
- clear, concise

Presentations

- ***Day I* summary**
  - summarize issues as they relate to subject technology
  - conclusions/recommendations
  - 15 minutes
- ***Day II* summary**
  - summarize findings on simulator development and user interface
  - next steps
  - 15 minutes

Glossary

- **Technology module**
  - a plant subsystem (e.g., a gasification subsystem in an IGCC plant)
- **Component**
  - a part of a subsystem (e.g., a pump or heat exchanger)
- **Model**
  - software code used to describe the transient or steady-state performance of a technology module or component
- **Simulator**
  - software code that describes a complete system or plant